

ABSTRACT

A thermocouple junction box for reducing EMF generated by a stud-and-cup configuration comprises a cup adapted to be electrically connected to a thermocouple sensing junction and a stud disposed, at least in part, within the cup, the stud being electrically isolated from the cup. In another aspect, a thermocouple junction box comprises a contact element adapted to be electrically connected to a thermocouple sensing junction and a stud mechanically coupled to the contact element by means of an insulating material and electrically isolated from the contact element by means of the insulating material. In a further aspect, a thermocouple assembly comprises a thermocouple sensing junction, a contact element, and a stud. The stud is adapted to receive thereon a conductive element electrically connected to a thermocouple cable, the stud being electrically isolated from and mechanically coupled to the contact element. The thermocouple cable is coupled to the thermocouple sensing junction via an interface between the conductive element and the contact element when the conductive element is disposed about the stud and seated on the contact element. In still another aspect, a method of reducing thermocouple error consistent with the invention comprises: in a thermocouple junction box having a stud fixedly disposed in relation to a contact element, electrically isolating the stud from the contact element.